

SIEMENS

Opdima®

SP

Wiring Diagram

© Siemens AG 2004

The reproduction, transmission or use of this document or its contents is not permitted without express written authority. Offenders will be liable for damages. All rights, including rights created by patent grant or registration of a utility model or design, are reserved.

Register 6

Print No.: SPB7-230.051.09.03.02

Replaces: SPB7-230.051.09.02.02

English

Doc. Gen. Date: 08.04

Chapter	Page	Revision
All	All	03

Document revision level

The document corresponds to the version/revision level effective at the time of system delivery. Revisions to hardcopy documentation are not automatically distributed.

Please contact your local Siemens office to order current revision levels.

Disclaimer

The installation and service of equipment described herein is to be performed by qualified personnel who are employed by Siemens or one of its affiliates or who are otherwise authorized by Siemens or one of its affiliates to provide such services.

Assemblers and other persons who are not employed by or otherwise directly affiliated with or authorized by Siemens or one of its affiliates are directed to contact one of the local offices of Siemens or one of its affiliates before attempting installation or service procedures.

	Page
1 General	1 - 1
Documents required	1 - 1
2 System overview	2 - 1
General - MAMMOMAT NovationDR	2 - 1
General - MAMMOMAT 3000	2 - 2
Location of components	2 - 3
Cable connections - MAMMOMAT NovationDR	2 - 6
Cable connections - MAMMOMAT 3000	2 - 7
3 Functional diagrams	3 - 1
Block diagram - MAMMOMAT NovationDR	3 - 1
Block diagram - MAMMOMAT 3000	3 - 2
Power supply and ground connections	
- MAMMOMAT NovationDR	3 - 3
Power supply and ground connections	
- MAMMOMAT 3000	3 - 4
Biopsy unit potentiometers/display	
- Both M3000 and MAMMOMAT NovationDR	3 - 5
CCD camera and RS-232 communication	
- MAMMOMAT NovationDR	3 - 6
CCD camera and RS-232 communication	
- MAMMOMAT 3000	3 - 7
4 List of components	4 - 1
Fuses	4 - 1
Printed circuit boards	4 - 1
Potentiometers	4 - 3
Miscellaneous	4 - 3
5 List of test points and LEDs	5 - 1
Test points	5 - 1
LEDs	5 - 2
6 Changes to previous version	6 - 1

This document shows the electrical connections, electrical components and test points within the Opdima® system.

Documents required

The following document is referred to in this manual:

- MAMMOMAT Novation^{DR} Wiring Diagrams
- MAMMOMAT 1000/3000 Nova Wiring Diagrams

This page intentionally left blank.

General - MAMMOMAT Novation^{DR}

The digital biopsy and spot imaging system Opdima® is an option to the MAMMOMAT Novation^{DR}.

Opdima® consists of:

- Workstation
- Biopsy controller
- CCD camera

The biopsy controller is the central unit for the cable connections in the Opdima® system.

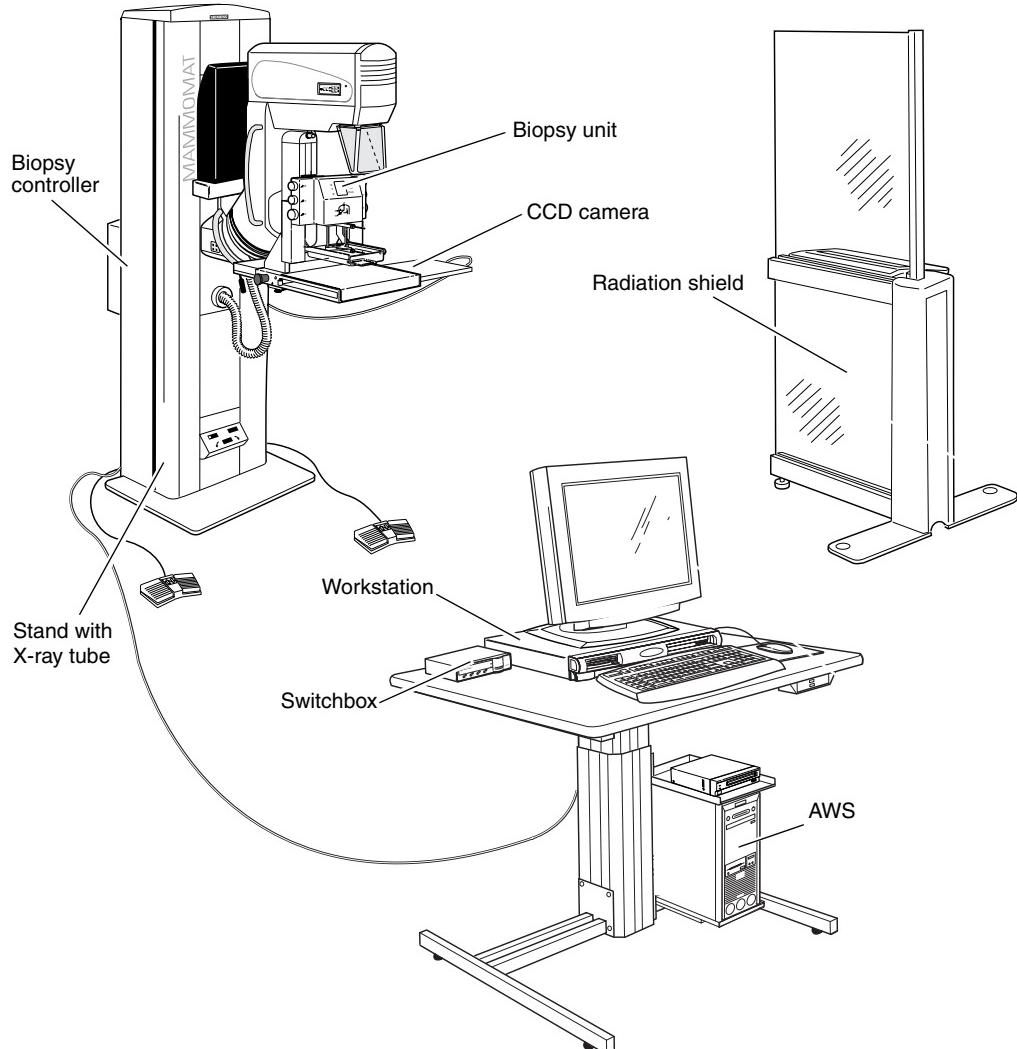


Fig. 1 Opdima® subassemblies with a MAMMOMAT Novation^{DR}

OPD00634

General - MAMMOMAT 3000

The digital biopsy and spot imaging system Opdima® is an option to the MAMMOMAT 3000.

Opdima® consists of:

- Workstation
- Biopsy controller
- CCD camera

The biopsy controller is the central unit for the cable connections in the Opdima® system.

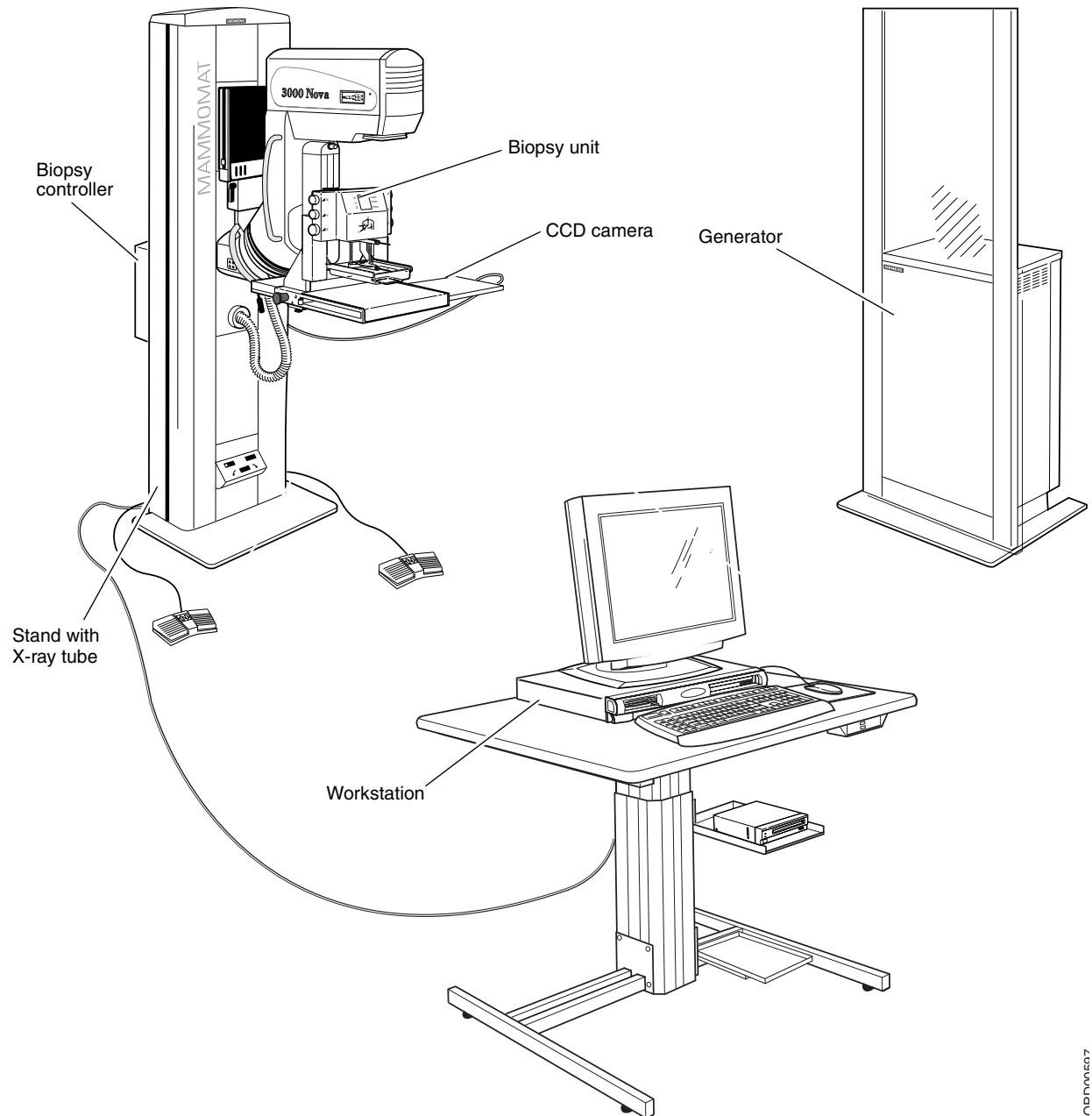


Fig. 2 Opdima® subassemblies with a MAMMOMAT 3000

Location of components

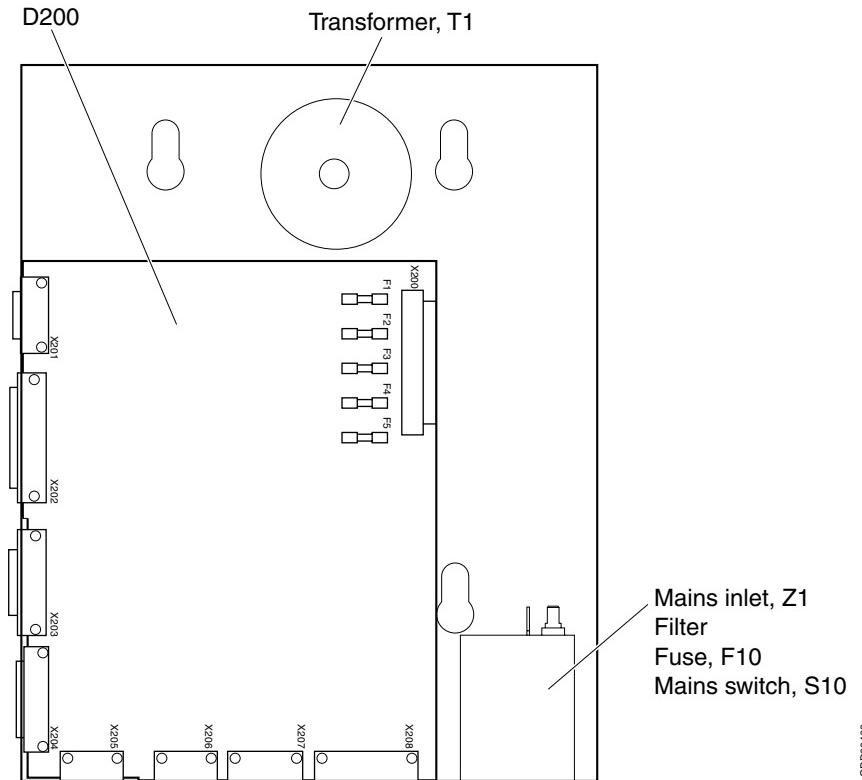


Fig. 3 Biopsy controller, inside

Front panel description

Position	Explanation
1	Power switch
2	Power-indicator LED
3	Smart card reader (not used in Opdima)
4	3.5-inch diskette drive (not used in Opdima)
5	5.25-inch CD drive

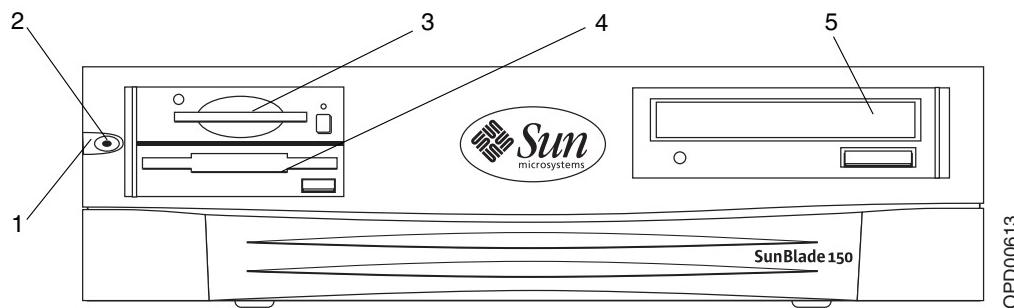
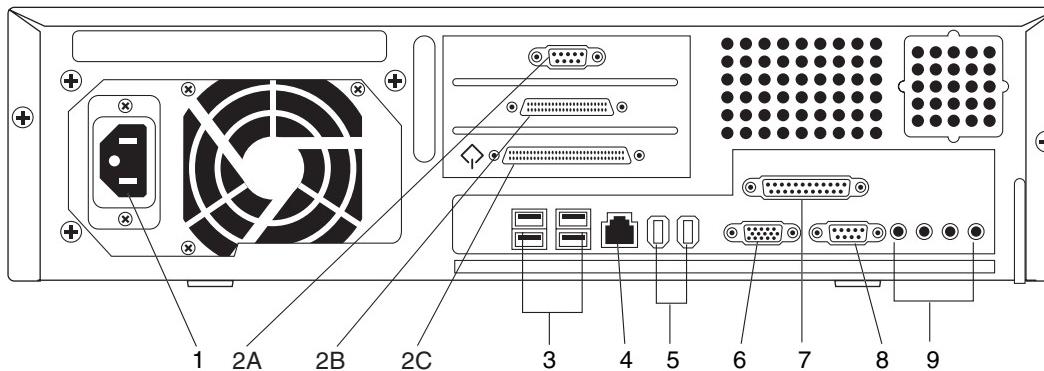


Fig. 4 Workstation main unit, front panel overview

OPD00613

Back panel description and connector symbols

Position	Explanation	Connector symbols
1	Mains power supply	None
2A	Biopsy controller interface (X204)	PCI-3
2B	Camera interface via biopsy controller (X203)	PCI-2
2C	SCSI interface	PCI-1
3	Universal serial bus (USB) connectors (four) (keyboard and mouse interface to switchbox, if MAMMOMAT Novation ^{DR} is used)	
4	Network connector	
5	Not applicable (IEEE 1394 (two) connectors), not used	
6	Monitor interface (to switchbox, if MAMMOMAT Novation ^{DR} is used)	
7	Parallel port to local printer	//
8	Mammomat interface via biopsy controller (X204)	SERIAL
9	Audio module headphones connector, not used	
9	Audio module line-out connector, not used	
9	Audio module line-in connector, not used	
9	Audio module microphone connector, not used	



OPD00640

Fig. 5 Workstation main unit, back panel overview

Cable connections - MAMMOMAT Novation^{DR}

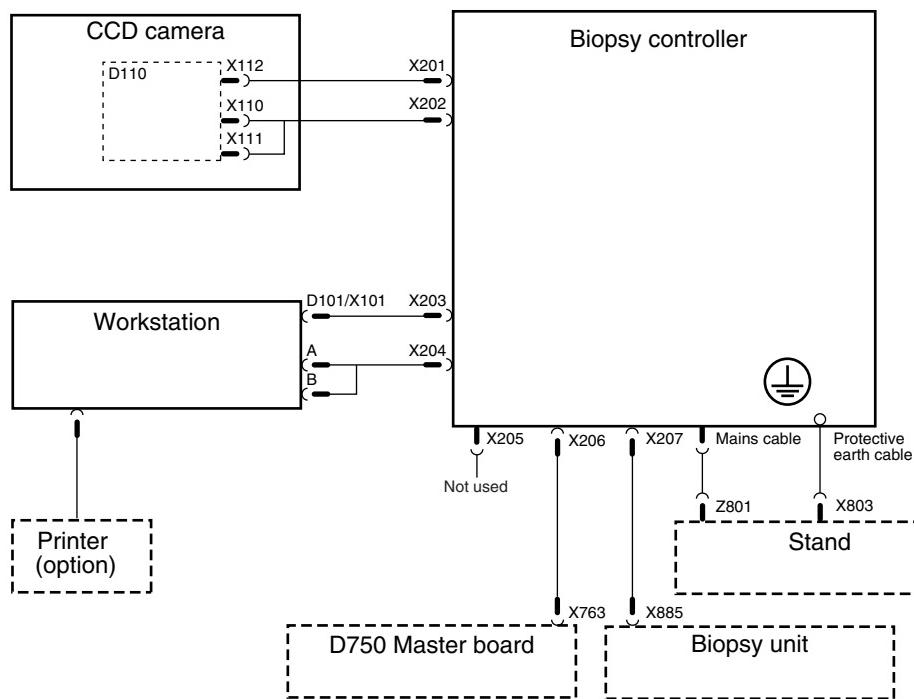


Fig. 6 Cable connections - MAMMOMAT Novation^{DR}

Cable connections - MAMMOMAT 3000

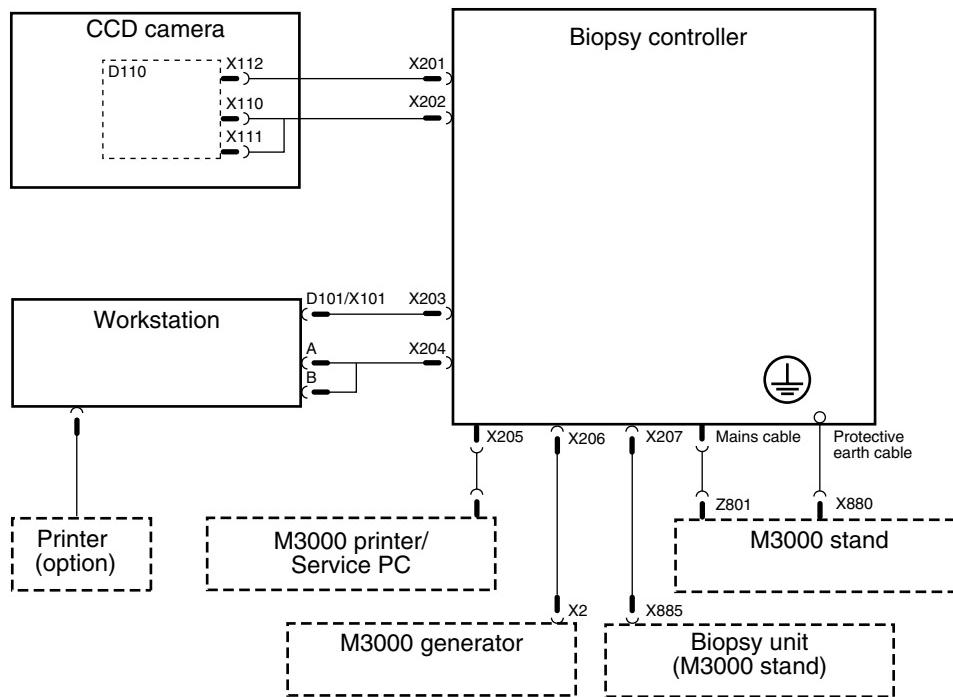


Fig. 7 Cable connections - MAMMOMAT 3000

This page intentionally left blank.

Block diagram - MAMMOMAT Novation^{DR}

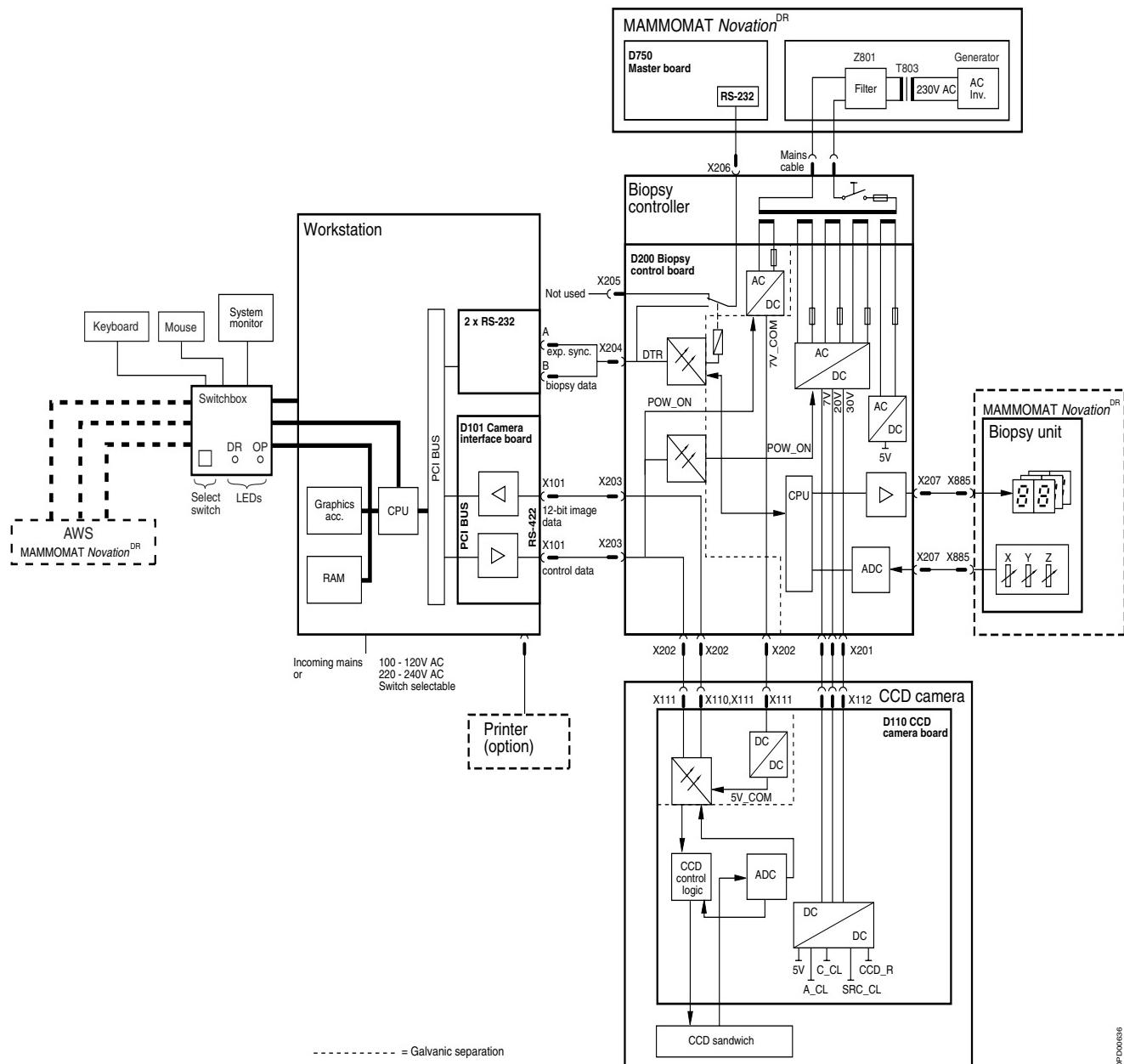


Fig. 1 Block diagram - MAMMOMAT Novation^{DR}

OP000616

Block diagram - MAMMOMAT 3000

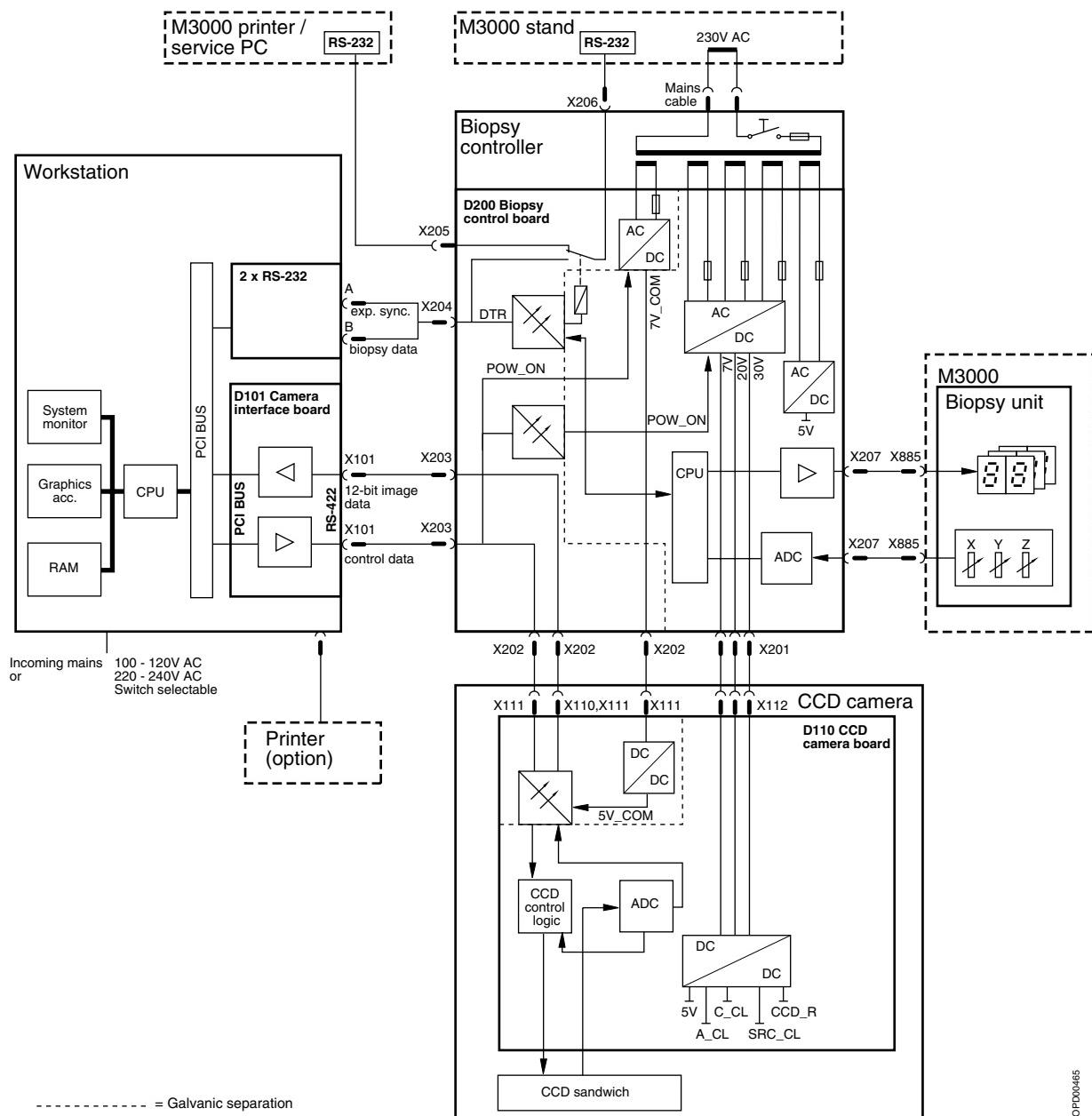


Fig. 2 Block diagram - MAMMOMAT 3000

OFD00465

Power supply and ground connections - MAMMOMAT Novation^{DR}

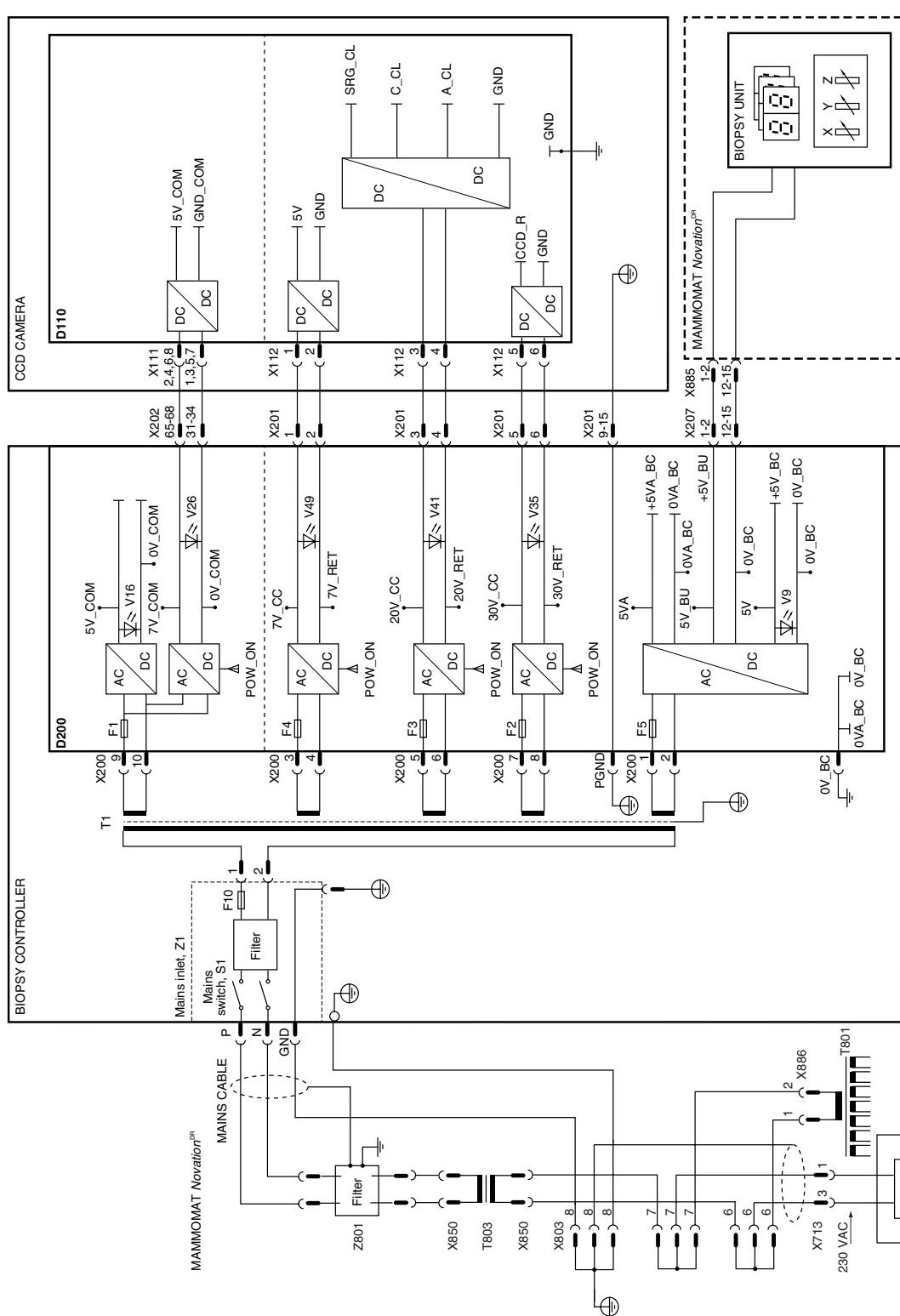


Fig. 3 Power supply and ground connections - MAMMOMAT Novation^{DR}

Power supply and ground connections - MAMMOMAT 3000

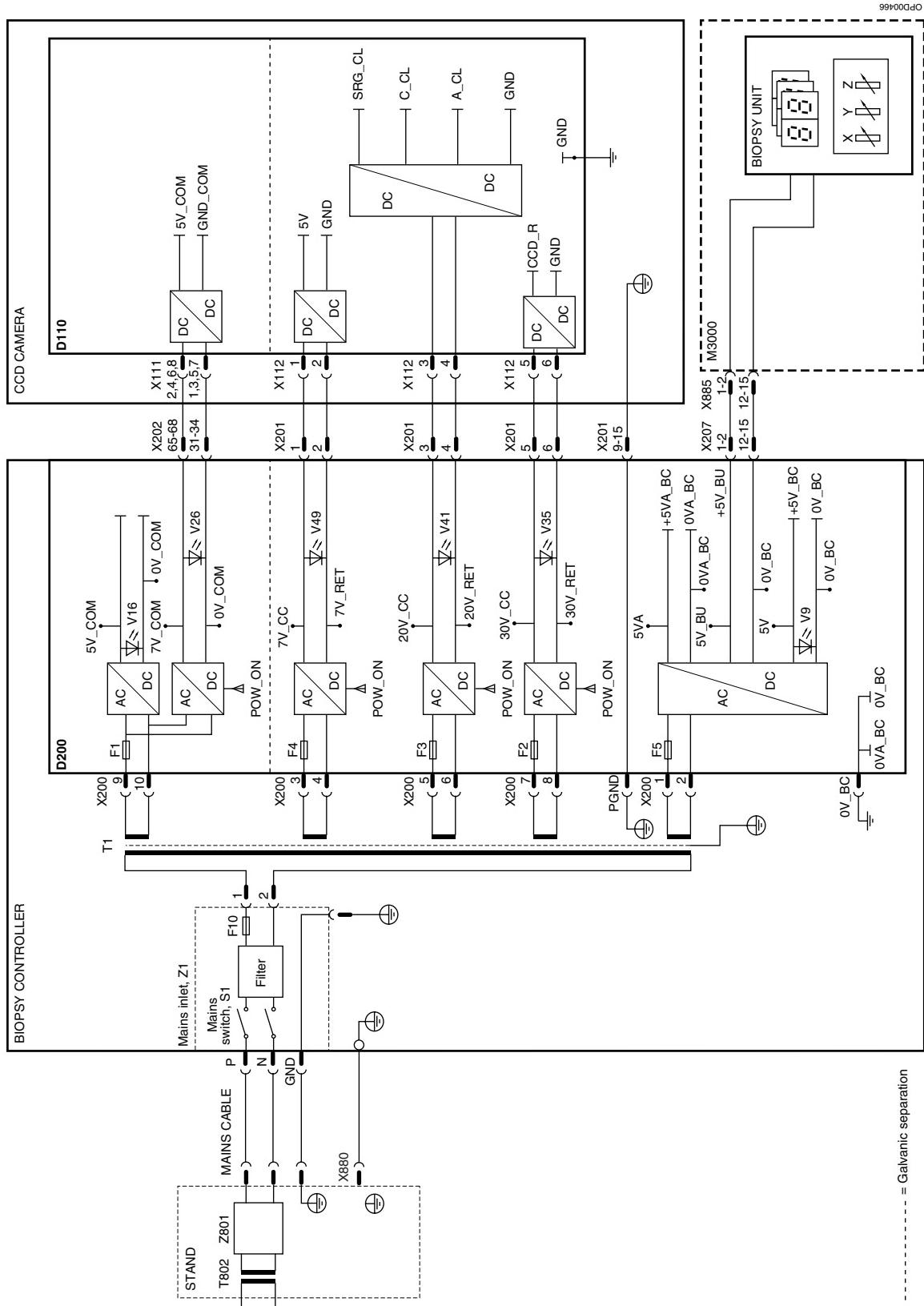


Fig. 4 Power supply and ground connections - MAMMOMAT 3000

Biopsy unit potentiometers/display - Both M3000 and MAMMOMAT Novation^{DR}

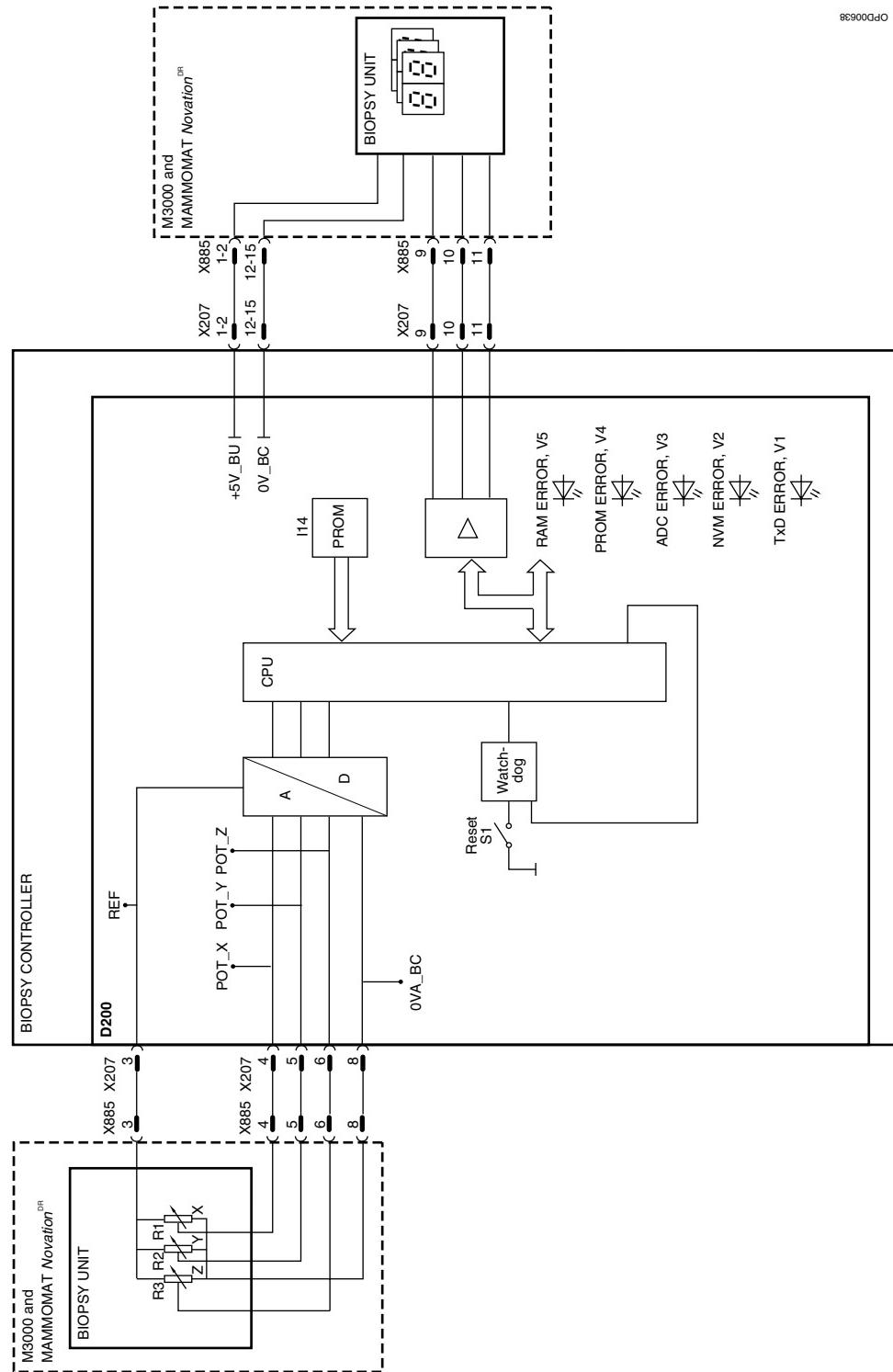


Fig. 5 Biopsy unit potentiometers/display both M3000 and MAMMOMAT Novation^{DR}

**CCD camera and RS-232 communication
- MAMMOMAT Novation^{DR}**

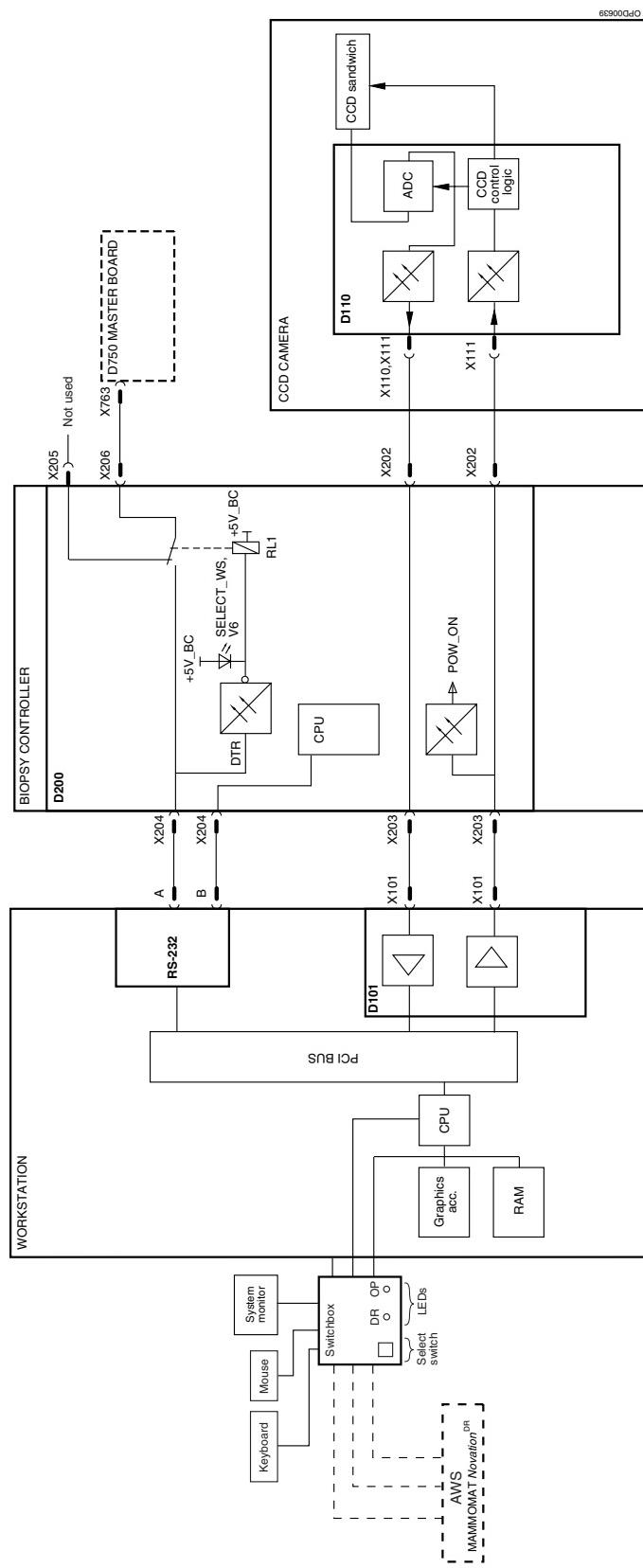


Fig. 6 CCD camera and RS-232 communication - MAMMOMAT Novation^{DR}

CCD camera and RS-232 communication - MAMMOMAT 3000

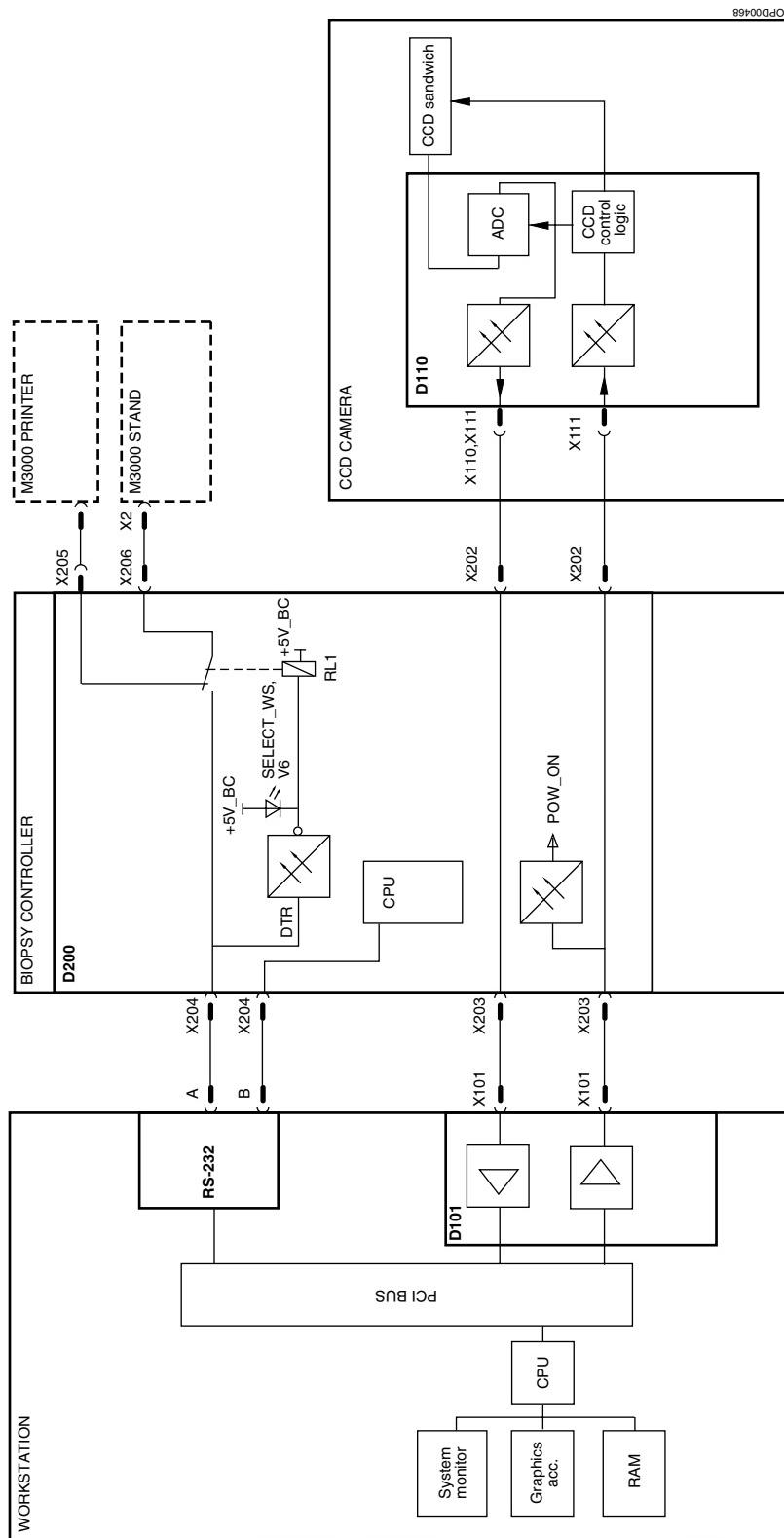


Fig. 7 CCD camera and RS-232 communication - MAMMOMAT 3000

This page intentionally left blank.

Fuses

Component	Description	Location
F1	1.6AT / 250V (7V_COM)	D200
F2	0.5AT / 250V (30V_DC)	D200
F3	1AT / 250V (20V_DC)	D200
F4	1.6AT / 250V (7V_DC)	D200
F5	1AT / 250V (5V_BC)	D200
F10	1AT / 250V (230VAC)	Mains switch, S10
F1	1.5A / 30V (not replaceable)	D101

Printed circuit boards

Component	Description	Location
D200	Biopsy control board	Biopsy controller
D101	Camera interface board	Workstation
D110	Camera control board	CCD camera

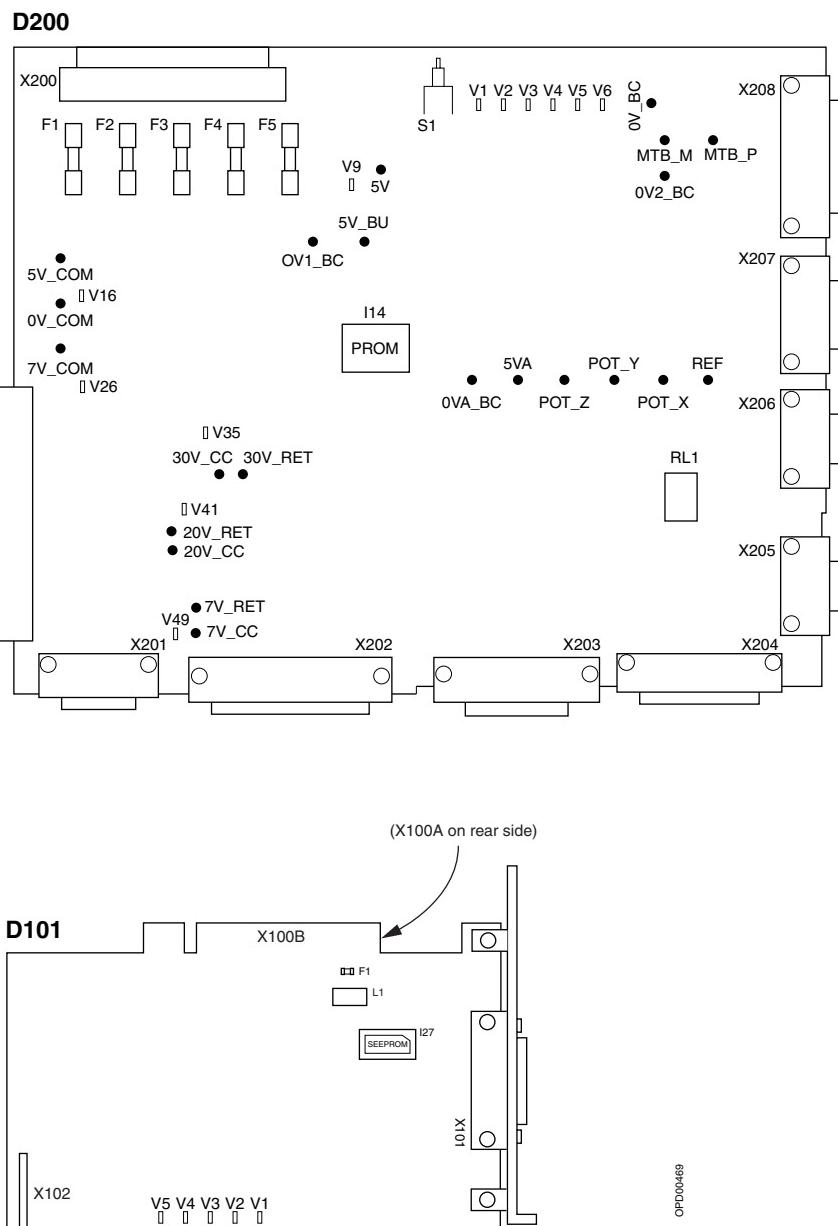


Fig. 1 Printed circuit boards, test points and components

Potentiometers

Component	Description	Location
R1	Measurement of x-deviation	Biopsy unit
R2	Measurement of y-deviation	Biopsy unit
R3	Measurement of z-deviation	Biopsy unit

Miscellaneous

Component	Description	Location
Z1, S10	Filter with mains switch	Biopsy controller
T1	Mains transformer with thermal fuse	Biopsy controller
I14	PROM containing biopsy controller software	D200
S1	Reset switch, D200	D200
I27	Serial EEPROM containing device setup information	D101

This page intentionally left blank.

Test points

Telescoping	Location	Value	Signal/voltage description
5V	D200	4.75-5.25 V	5 VDC to biopsy controller
5VA	D200	4.75-5.25 V	5 V analog to biopsy controller
5V_BU	D200	4.75-5.25 V	5 VDC to biopsy unit
0VA_BC	D200	n/a	0V for 5VA
0V1_BC, 0V2_BC	D200	n/a	0 V for 5V and 5V_BU
5V_COM	D200	4.75-5.25 V	5 VDC to receiver
7V_COM	D200	6.85-7.55 V	7 VDC for communication circuits in CCD camera
0V_COM	D200	n/a	0 V for 5V_COM and 7V_COM
7V_CC	D200	6.85-7.55 V	7 VDC to CCD camera
7V_RET	D200	n/a	0 V for 7V_CC
20V_CC	D200	19.0-22.0 V	20 VDC to CCD camera
20V_RET	D200	n/a	0 V for 20V_CC
30V_CC	D200	28.5-33.0 V	30 VDC to CCD camera
30V_RET	D200	n/a	0 V for 30V_CC
POT_X	D200	0-REF	Analog voltage from the biopsy unit potentiometer R1 (x-axis)
POT_Y	D200	0-REF	Analog voltage from the biopsy unit potentiometer R2 (y-axis)
POT_Z	D200	0-REF	Analog voltage from the biopsy unit potentiometer R3 (z-axis)
REF	D200	2.0-3.0 V	Supply voltage for POT_X, POT_Y and POT_Z
L1	D101	4.75-5.25 V	5 VDC to D101 (after fuse F1/D101)

LEDs

LED	Location	Signal/voltage description
V2	D200	NVM error, CPU output pin
V1	D200	TxD error, CPU output pin
V3	D200	ADC error, CPU output pin
V4	D200	PROM error, CPU output pin
V5	D200	RAM error, CPU output pin
V49	D200	7V_CC, supply voltage
V35	D200	30V_CC, supply voltage
V9	D200	5V, supply voltage
V41	D200	20V_CC, supply voltage
V16	D200	+5V_COM, supply voltage
V26	D200	7V_COM, supply voltage
V6	D200	SELECT_WS, workstation selected for RS-232 communication with MAMMO-MAT 3000
V1	D101	FIFO almost empty
V2	D101	FIFO less (or equal) than half full
V3	D101	FIFO more than half full
V4	D101	FIFO almost full
V5	D101	FIFO full

Chapter	Page	Change
1	1	MAMMOMAT <i>Novation</i> ^{DR} Wiring Diagrams is added in the chapter Documents required. Since this update shall be valid for OPDIMA in conjunction with both MAMMOMAT <i>Novation</i> ^{DR} and MAMMOMAT 3000.
2	1	General description of MAMMOMAT <i>Novation</i> ^{DR} is new.
2	5	In position 3 and 6 information regarding the usage of switchbox together with MAMMOMAT <i>Novation</i> ^{DR} has been added.
2	6	Cable connections of MAMMOMAT <i>Novation</i> ^{DR} is new.
3	1	Block diagram of MAMMOMAT <i>Novation</i> ^{DR} is new.
3	3	Power supply and ground connections of MAMMOMAT <i>Novation</i> ^{DR} is new.
3	5	Biopsy unit potentiometers/display is valid for both MAMMOMAT <i>Novation</i> ^{DR} and MAMMOMAT 3000.
3	6	CCD camera and RS-232 communication of MAMMOMAT <i>Novation</i> ^{DR} is new.

This page intentionally left blank.